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Ormerod, Eleanor A.

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Thirty-second Thousand. [1895.]

NOTES ON
“LICKED BEEF” AND “JELLY,”
AND
INJURY TO HIDES
FROM ATTACK OF
OX WARBLE FLY, OR BOT FLY,
Hypoderma Bovis, De Geer.

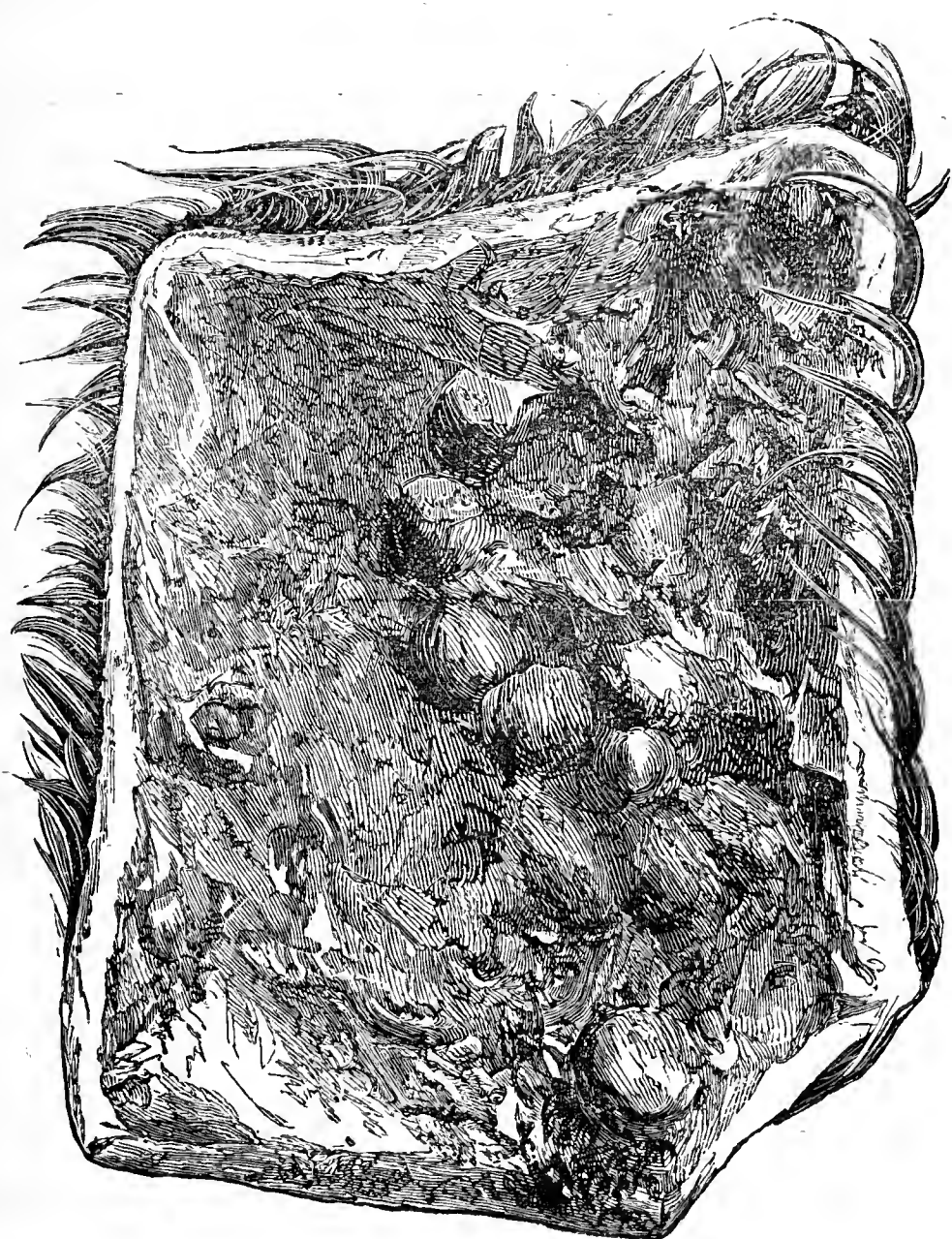


FIG. 1.—Piece of under side of warbled hide; warbles about half size.
From a Photo by Messrs. BYRNE, Richmond, Surrey.

In the course of correspondence regarding warble attack for some years past, my attention has been often called to the

condition of the surface of the carcase, often to be found beneath badly warbled hide, and commonly known (from the belief that it is caused by the cattle licking themselves) as "licked beef." Early in the present season I was desired, by various leading butchers and representatives of the trade, to procure a report from some known authority as to the cause and precise condition of this altered layer, and to give the results in leaflet form for distribution. So far as specimens sent and space allow, I have now given some points of this examination; but as the existence of this result of inflammation from warble presence, known as "licked beef" and "butchers' jelly," and the loss thereon in various ways is not as well known as it should be to farmers and cattle owners, I have given some short descriptions of these diseased conditions from business reports, with which I have been favoured for this purpose.

Mr. C. E. Pearson, Wholesale Butcher, Sheffield, stated:—
 "I may say that the effect of warbles on the carcase is more serious than can possibly be imagined by the outside appearance of the beast. . . . The carcase of beef assumes a nasty yellow colour, and also a soft flabby appearance on the outside rind of the beast (where the warble has been in operation), so much so that the carcase has in some cases to be pared down to the flesh to make the appearance of the animal at all presentable for the market, causing thereby a grievous amount of loss to the butcher. I am speaking from practical experience, killing on an average twenty beasts or more a week."

Mr. Wing, Hide and Skin Broker, Boston, writes me:—
 "There is a jelly or watery substance on the back of the carcase when dressed, on and between the rind or thin skin and the bone of the beast."

Notes given me from butchers, per favour of Mr. J. McGillivray, Sec. of the Hide Inspection Society, Newcastle-on-Tyne, also mention the loss from having to pare the injured part away,—and also show the special part of the animal, which is known to all cattle owners to be that most affected by warbles, as that beneath which there is most damage,—*viz.*:—"The worst of it is that it is always 'licked' on the most expensive parts, *viz.*, the back, which comprises the sirloin and fore-chain. . . . If I knew, I would not buy a 'licked' beast, even suppose I could get it at a shilling a stone less," &c.

On applying to Mr. Hy. Thompson, M.R.C.V.S., of Aspatria, Cumberland, who has long devoted much attention to warble attack, for an exact description of the damage, he replied:—"What causes the damaged meat or beef is the

chronic inflammation set up by the warbles in the skin, which extends to the connective tissues, thence to the flesh, producing the straw-coloured jelly-like appearance of a newly slaughtered carcase of beef, which in twelve or twenty-four hours, when exposed to the air, turns a dirty greenish yellow colour, and thus spoils the beef, having a frothy discharge oozing from the surface, with a soapy-like look."

With regard to this altered material which has to be scraped away, Mr. John Child, Manager of the Leeds and District Hide, Skin, and Fat Co., wrote me on the 3rd of July:—"In the worst part of the warble season I could get you bucketsful of inflamed tissue (commonly called by the butchers, 'jelly'), cut and scraped from the carcase after the hide is taken off. The formation of this matter must be a great drain on the health, condition, and quality of the animal, and must be a great loss to somebody."

About the middle of July, Mr. Child forwarded me a mass of this inflamed tissue or "jelly" obtained from the animal whilst in the process of dressing, so that the material was taken both from the hide and the carcase at the same time, and as warble maggots were present in it the specimen was a very perfect example, because the cause of the evil (namely, the maggots) were there plainly to be seen, as well as the damage they had caused. This mass I forwarded, by his kind permission, to Mr. John Penberthy, Prof. of Pathology at the Royal Veterinary College, Camden Town, N.W., requesting him to tell me the nature of the so-called "jelly," and the cause of the diseased condition, to which Prof. Penberthy replied:—"I have made an examination of the specimen sent. The so-called 'jelly' is the product of inflammation, and there is every reason for believing that this inflammation is due to the warbles. In the small portion of material received there were three apparently healthy warbles, evidence of two others in a decomposing condition, and three cavities where other warbles had been lodged. The material is not fit for human consumption. I think it very deleterious to the health and comfort of the affected animal."

On the 19th of July, in reply to my request that he would tell me by what name the diseased tissue should be described, Prof. Penberthy wrote as follows:—"I should call the material inflammatory product in the subcutaneous tissue. Inflammatory product is made up of constituents of blood exuded through vessel-walls which have been damaged. It is allowed by some pathologists that inflammation, too, may excite growth of the cells previously existing in the part. The dark red colouring is most likely due to escape of blood from small vessels which

have ruptured. The orange-coloured material, which I have found in some cases, is inflammatory product undergoing degenerative changes; in others, decomposing warbles."

Another very fine specimen for our purpose was sent me by favour of Mr. H. Thompson (before mentioned). This consisted of the whole length of spine,—that is the backbone, flesh, skin and all, cut right out along the centre of the animal after slaughtering. On examination it proved to be only moderately warbled, the number of warbles (twenty-six, including the very small ones) not being more than are often met with; so that whilst the above-mentioned specimen gave example of the completed mischief, this one showed the earlier stage of injury from moderate and not fully-developed attack. Of this sample, Prof. Penberthy wrote me:—"In a superficies of 450 inches, I found eighteen well-developed and eight very small warbles. There was, however, ample evidence of inflammatory action, and, in a few spots, of inflammatory products. . . . This morning, in those parts in which the warbles were most numerous, putrefactive change was much more advanced than in those in which there were no warbles."

To the above notes I add a single one, of many which I have, showing the loss to the cattle owner by waste of food not formed into meat by the warbled beast, as well as deficiency of receipt per stone on the carcase and per pound on the hide. Mr. J. Sparkes, Wearhead, Darlington, wrote me, on the 10th of April, that he had lately sold to a butcher a heifer, which turned out a much lighter weight than was expected from the extra good food. The animal turned out to be badly warbled, and "down the spine frothy, loose, and mattery, or in a sort of jelly," and some of the beef had to be scraped before sending it out. The loss on hide at 1*d.* per pound would be about 5*s.* on the hide; the loss on beef, the animal being sold by the stone, fell on the owner. This was estimated as at least six stones less than it should have been, and deficiency in receipt on hide and beef was put at 50*s.* to 60*s.*, to which has to be added cost of food spent to no purpose. Mr. Sparkes added, he would take care that this should not occur again, with the help of McDougall's smear and careful inspection.

The above notes, which are condensed into as few words as possible, give no room for full details, being chiefly intended to reply to the enquiry as to what it is exactly which happens from bad warble attack to cause the altered condition beneath the hide. I have not entered on how far the beef in these circumstances acquires a bitter taste, as this appears (from practical reports) to vary from the meat being almost uneatable to its being perfectly well tasted, nor how far the "licking" of

the animal to allay its sufferings may add to the evil below the hide, though we find the alteration exists where licking cannot reach; neither have I entered on effects of inflammation produced by accidents, or illness; but only (as asked) on what is plainly caused by the maggots there found present.

In my Annual Report, for years back, I have given information, placed in my hands, of the loss from non-thriving, *often*, and death sometimes, from effect of warbles; and the presence of the altered state of tissues, which comes as above shown, ought to be known by all cattle owners.

The accompanying figures show the progress of the mischief in the hide; firstly, the track down through the hide by which, as far as I see from my own observations, the newly-hatched and then worm-like maggot made its way down with its sharp-cutting hooks. This seems to me to be proved by the fact that the jagged-sided channel (not smooth-sided, as it would be if pierced by an egg-laying tube) leads in a slanting, or straight, or much curved direction

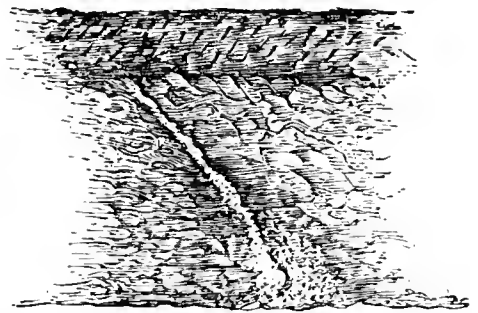


FIG. 2.—Section, magnified.

from a little opening at the outside of the hide to where the then very minute maggot lies at the bottom. This may be proved by gentle squeezing, which sends a drop of blood along the passage; also I have found the tunnel cut partly down from the outside, and I have found a small soft body in it. Early in the attack the warble-hole and the passage down has not skinned over; it is only torn and bloody, and can heal completely. Towards the latter part of the attack, when the maggot has grown to a thick leathery grub an inch long, and has forced the hole in which it lies to the shape given in fig. 2, a kind of film or false sort of skin has formed over the upper part of the surface of the cell, and even after the maggot is gone the scaly films prevent for a long time a proper joining up of the hole. The figure shows a section somewhat larger than life of the warble-cell, with the under tissues pressed out, as in the infested hide just taken from the animal.

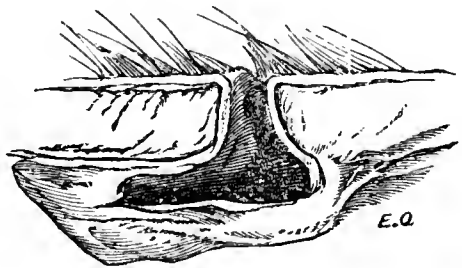


FIG. 3.—Section of warble-cell, after soaking in water.

Fig. 1, on first page, shows the inside of a piece of warbled hide, in which the cluster of warbles, though only about half size, give an idea of how these cells, each with a living maggot in them, of various sizes up to an inch long, must interfere with the healthy condition and comfort of the animal.

Figures 4 and 5 show respectively the muscles inside and the prickles outside the maggot after its final moult, by means of which they move about and keep up a constant irritation.

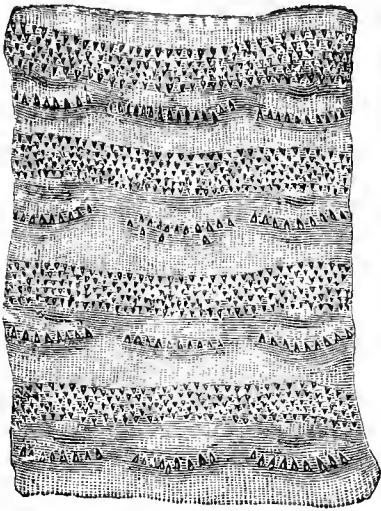


FIG. 4.—Muscles of maggot, much magnified.

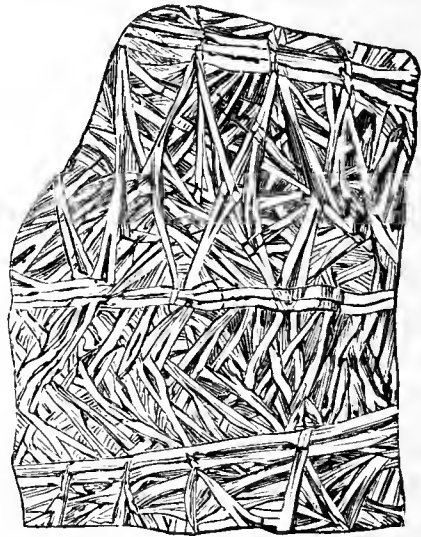


FIG. 5.—Prickles of maggot, much magnified.

What the pain is to the animals, I can only estimate from surgical and personal report of human sufferers under attack of a very similar grub in South America and the West Indies. This is described as inflammation accompanying the swelling, afterwards “intense itching,” in addition to the pain of an ordinary sore. In another case, the pain was not constant, but at times sharp, as if the maggot was “screwing” itself round in its hole.

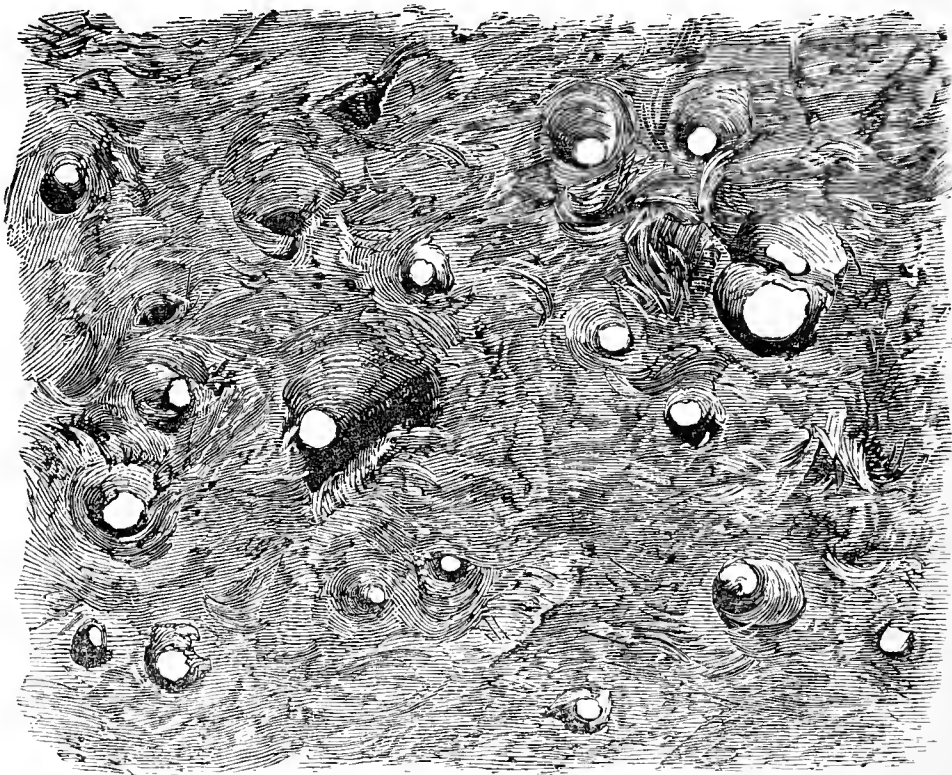


FIG. 6.—Portion of inside of tanned warbled hide.

Going on to the result of this to the hide alone, fig. 6 shows the ruined state of a badly warbled hide, or of what often

happens to the best portions of the best hides,—a sheer waste of money, calculable by many thousands of pounds annually.

From the returns of amount of warbled hides received in given periods, and losses thereon, which I was favoured with from some of our leading British Hide Firms and Societies (and which I have given in detail, with sender's name, in my Twelfth Annual Report), I add notes of items of loss at three localities, just to show what is going forward.

In a period of twelve months, 102,877 hides passed through the market; of these, 60,000 were warbled. Loss estimated at £15,000.—J. Mc G.

In five months, 61,103 hides passed, of which 14,830 were warbled. Loss, £2873.—W. M. & Son.

In four months, 12,133 hides passed; about one-third of this amount estimated as warbled, at a total loss of £1041.—W. W.

It is sometimes said that this loss does not matter to the farmer;—but IT DOES! Every one of those warbled hides is a sign of so much out of the farmer's pocket for the food he spent in feeding grubs in his cattle's backs, which should have gone to form meat and milk, instead of being wasted in foul maggot-sores; and the quantities of hides of dead beasts brought in with their backs "in a mass of jelly," show there IS loss going on to an extent that no farmer *would* allow to go on if he did but know the cause, and the easy cure.

The aggregate amount of this loss is something enormous. As I have previously noted elsewhere, this is variously estimated, by different practical men, as being from two to seven millions pounds sterling, *at the least*, per annum. Mr. R. Stratton, of the Duffryn, Newport, Monmouthshire, who has devoted especial attention to warble loss, writes me:—"I am sure it cannot be less than £1 per head of horned stock, and it is probably much more."

From the cattle owner's point of view, we have to consider the direct injury to health and fattening powers so quietly borne that its existence is often not recognised; and (even in cases where the attack is completed by death) it may happen that it is not until the riddled hide is lifted from the jellied back that the reason of the trouble is made known, which a quarter of an hour's care, and outlay of a few pence earlier in the year, would have quite prevented. Besides this is the well-known damage in dairy and other herds from loss of milk and harm to the cows, and loss of flesh to fattening beasts by tearing about (to use again the words of Mr. Stratton) "at as good a pace as can be got out of them."

The returns of the warbled hides give the key to estimating amount of the widespread mischief which *has been* going on, and which *is yet further to come* on these very hides by their frequent uselessness for working up as good leather.

Movement is going steadily forwards amongst leading men—whether farmers, cattle owners, butchers, or tanners, who have seen for themselves the need of checking this most unnecessary trouble, and how easily this can be done; and, on my part, I shall be happy to give every information in my power on this subject to all who may apply to me, and also particularly glad to receive any, either now, or when the warble season is again returning.

ELEANOR A. ORMEROD.

TORRINGTON HOUSE,
ST. ALBANS.

September, 1889.

P.S.—I shall be happy to forward to any applicant (interested in warble prevention) a copy of this leaflet, gratuitously, on receipt of a stamp for postage; and also, if wished, a copy of my previously issued four-page leaflet, giving a short life-history of the Warble Fly, fully illustrated, together with simple, thoroughly tried means of checking warble attack with little cost or trouble, of which leaflet more than 130,000 copies have already been issued. I would also gladly send larger numbers to those desiring copies for distribution.—E. A. O. [1894.]

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